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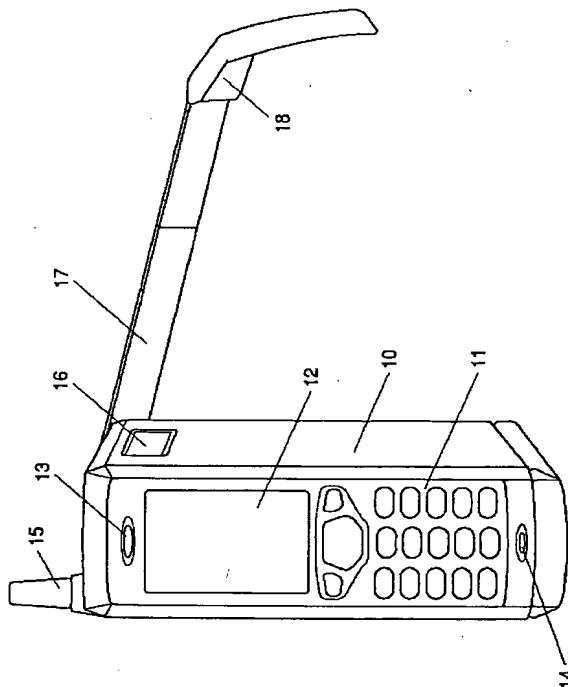
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(54) 【発明の名称】 携帯電話装置

(57) 【要約】

【課題】 携帯電話本体を片手で持ちながら電話をかけると同時に画像も見ることができる小型軽量の携帯電話装置を提供する。

【解決手段】 携帯電話本体 10 の側面に液晶表示部 16 を設け、また、携帯電話本体 10 に対して回動自在に設けたアーム 17 の先端に反射鏡 18 を設けて、液晶表示部 16 の映像を反射鏡 18 を介して観察するように構成する。携帯電話本体 10 を片手で持って受話部 13 を耳に当てることにより相手と通話しながら、液晶表示部 16 に映される相手の顔や表情を反射鏡 18 で反射させて眼前で見ることができる。



される相手の顔や表情を光反射手段で反射させて眼前で観ることができる。

【0012】また、本発明の携帯電話装置は、上記構成において、光反射手段が第1の表示部に映出された画像を反射する第1の反射鏡と、前記第1の反射鏡からの反射光を再度反射させる第2の反射鏡を具備した構成を有している。この構成により、第2の表示部に映出された画像を反転させることなく眼前に観ることができる。

【0013】

【発明の実施の形態】以下本発明の実施の形態について、図面を用いて説明する。

【0014】（実施の形態）図1に本発明の実施の形態における携帯電話装置の全体構成を示す。図1において、携帯電話本体10は、キーおよび押しボタンからなる操作部11、液晶表示部12、受話部13、送話部14およびアンテナ15から構成されている。携帯電話本体10の側面には第2の液晶表示部16が設けられている。この第2の液晶表示部16は、携帯電話本体10の通信機能を利用して受信される画像やデータを表示するものである。

【0015】携帯電話本体10の裏面には、プロジェクターム17が携帯電話本体10に対して回動自在に取り付けられており、その先端部には、反射鏡18が設けられている。プロジェクターム17は、その長手方向に伸縮自在で長さを自由に設定することができる。

【0016】プロジェクターム17は携帯電話の待ち受け状態、音声のみによる通話状態および液晶表示部に文字メールを表示させるメール機能で使用するときは、図2に示すように携帯電話本体10の裏面にたたまれている。このとき、反射鏡18は携帯電話本体10の底面に収納して保護されている。この状態では通常の携帯電話とまったく同様にして使用することができる。

【0017】テレビ受信するときや、相手から送信された画像データや文字データの受信を行うときは、操作部12のスイッチ操作により携帯電話本体10の側面の液晶表示部16をスイッチオンにする。これにより受信した画像や文字データは液晶表示部16に表示される。画像受信に関連する音声も送信されているときは、その音声を受話部13で受信し、側面の液晶表示部16の画像を見ながら受話部13からの音声聞くことにより画像と音声の両方を受信することができる。

【0018】一方、電話で通話をしながら画像を見る場合には、図1に示す状態にプロジェクターム17を引き起こして先端の反射鏡18の角度を調整する。この状態で携帯電話本体10の受話部13を耳に、送話部14を口の近くに持ってくると、眼前に反射鏡18がくるので、液晶表示部16に映っている画像が反射鏡18で反射されて眼前で見ることができる。

【0019】この場合、反射鏡18が1枚構成であると左右が反転した画像になるので、図3に示すように2枚

構成とするとよい。図3において、プロジェクターム17の先端に2枚の反射鏡181および182を収納したケース25が回転軸26を中心に回動自在に取り付けられている。プロジェクターム17は第1の枝部171内に第2の枝部172が収納されて構成されており、第2の枝部172を第1の枝部171から引き出すことによりその長さを調節することができる。

【0020】液晶表示部16からの画像は、1枚目の反射鏡181で反射して2枚目の反射鏡182に入射させるようにしているので、反射鏡181で左右反転した画像は反射鏡182で再度左右反転されるので、反射鏡182に映し出される画像は元に戻った画像になり、反射鏡182からの画像を見ることにより携帯電話をかけながら液晶表示部16に映出された画像を見ることが出来る。なお、反射鏡182を凸面鏡とすることにより画像は拡大されるので、大きな画像を見ることができる。

【0021】プロジェクターム17は、第1の枝部171内から第2の枝部172を引き出すことによりその長さ方向に伸縮自在であるので、反射鏡の遠近位置を調節することが可能である。従って使用者の視力に応じて反射鏡の位置を自由に調節することができる。また、反射鏡18はプロジェクターム17を伸ばした状態で、ケース25を回転軸26を中心に前後に回動させることにより画像を見る角度を調整することができる。

【0022】このように、携帯電話本体10に対してプロジェクターム17を回動自在に設け、その先端部に反射鏡18を設けることにより携帯電話本体10を片手に持って耳に当てるだけで音声通話と画像受信を同時に行うことができる。したがって、携帯電話としての小型軽量性を保ったまま画像受信もすることができる。また、操作もプロジェクターム17を引き起こして反射鏡18の位置調整を行うだけの極めて簡単な操作でよい。

【0023】なお、上記の実施の形態において、液晶表示部16を携帯電話本体10の側面に形成した例を説明したが、側面以外の部分、例えば裏面に形成しても良い。

【0024】

【発明の効果】以上説明したように、本発明は携帯電話本体の側面に設けられた液晶表示部に写される画像を、携帯電話本体に対して回動自在に設けられたアームの先端に設けられた反射鏡で観察することにより、携帯電話装置を片手で持ちながら電話をかけると同時に送信された画像も見ることができる。

【図面の簡単な説明】

【図1】本発明による携帯電話装置の全体構成を示す斜視図

【図2】本発明による携帯電話装置のアーム収納時の側面図

【図3】本発明による携帯電話装置の反射鏡部の構成と

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動作を説明する一部断面平面図

【符号の説明】

- 10 携帯電話本体
- 11 操作部
- 12 液晶表示部
- 13 受話部
- 14 送話部

* 15 アンテナ

16 液晶表示部

17 プロジェクタアーム

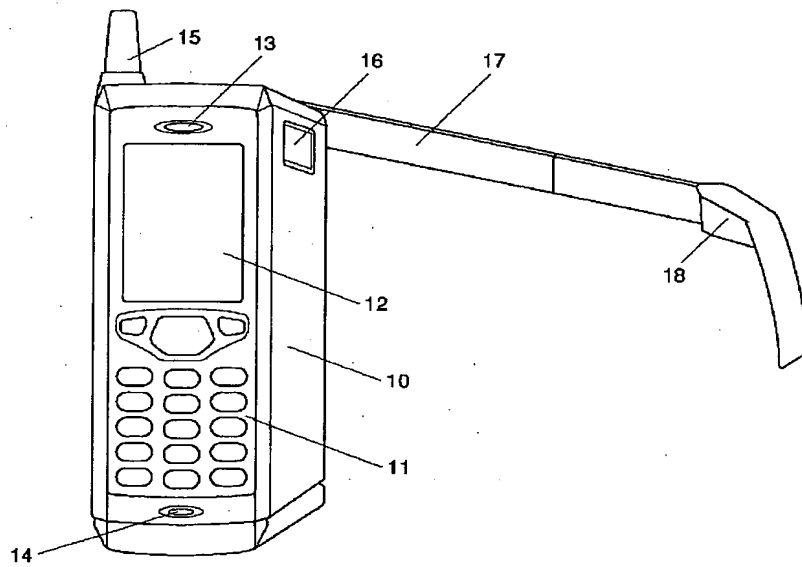
18、181、182 反射鏡

25 ケース

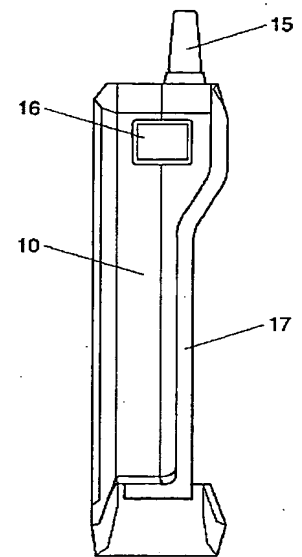
26 回転軸

* 171、172 枝部

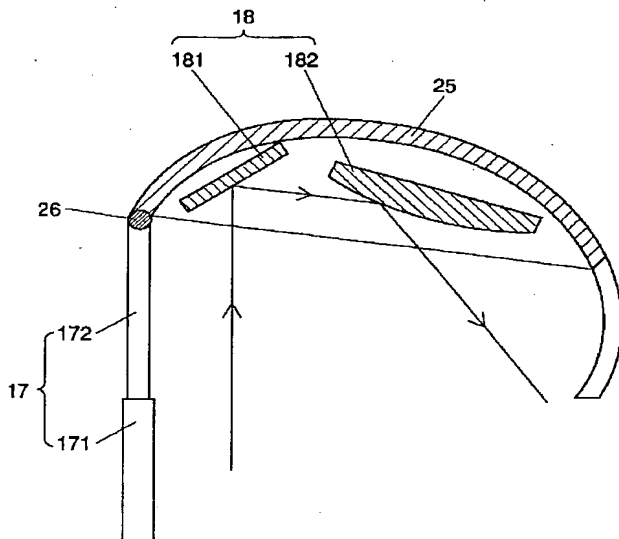
【図1】



【図2】



【図3】



フロントページの続き

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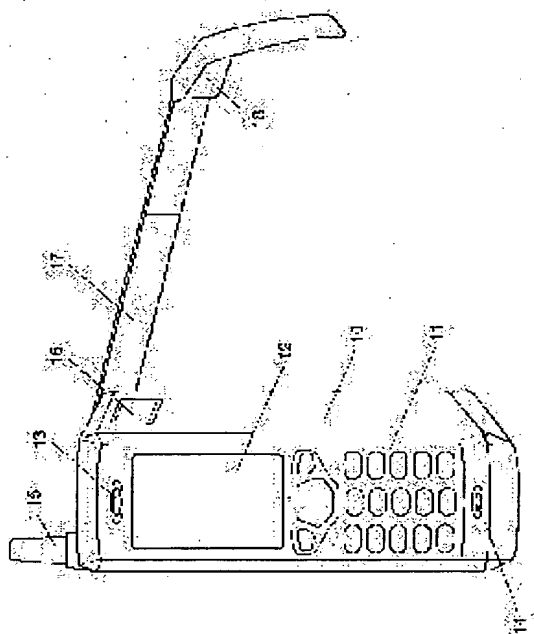
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(54) PORTABLE TELEPHONE DEVICE



(57)Abstract:

PROBLEM TO BE SOLVED: To provide a small and lightweight portable telephone device by which a user can make a call while holding a portable telephone main body with one hand and can simultaneously view, an image.

SOLUTION: The device is constituted by arranging a liquid crystal display part 16 on the side surface of the telephone main body 10 and arranging a reflection mirror 18 at the top end of an arm 17 provided freely rotatably with respect to the main body 10, thereby observing the image of the part 16 via the mirror 18. The user sees the face or expression of an opposite party reflected on the part 16 in front of him or her by reflection against the mirror 18 while talking with the opposite party on the phone by putting a receiver part 13 on his or her ear and holding the main body 10 with one hand.

CLAIMS

[Claim(s)]

[Claim 1] The cell phone unit characterized by having the display prepared in the body of a cellular phone, the arm prepared free [rotation] to said body of a cellular phone, and the reflecting mirror prepared in the point of said arm.

[Claim 2] Said arm is a cell phone unit according to claim 1 characterized by the elastic thing at a longitudinal direction.

[Claim 3] Said reflecting mirror is a cell phone unit according to claim 1 or 2 characterized by the ability to rotate freely to said arm.

[Claim 4] Said reflecting mirror is a cell phone unit according to claim 1 to 3 characterized by being a convex mirror.

[Claim 5] The cell phone unit characterized by said light reflex means standing face to face against said display when it has the display formed in the body of a cellular phone, the arm with which the end section was supported to revolve by the tooth back of said body of a cellular phone free [rotation], and the light reflex means established at the other end of said arm and said arm is rotated in the direction of an abbreviation right angle to said body of a cellular phone.

[Claim 6] The cell phone unit according to claim 5 characterized by arranging said light reflex means before one when the receiver section is applied to a lug, where said arm is rotated in the direction of an abbreviation right angle to said body of a cellular phone.

[Claim 7] The cell phone unit according to claim 5 or 6 characterized by providing the 1st reflecting mirror which reflects the image with which said display projected said light reflex means, and the 2nd reflecting mirror made to reflect again the reflected light from said 1st reflecting mirror.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the cell phone unit which can see image information.

[0002]

[Description of the Prior Art] A cellular phone has some which were equipped with the message function with voice, and were equipped with the e-mail function by text. The message with voice applies the receiver section of a cellular phone to a lug, and is performed by bringing the transmission section close to opening. Moreover, when transmitting and receiving e-mail, the key stroke is performing, looking at the display screen of a cellular phone.

[0003] To use it as a Personal Digital Assistant is tried by transmitting and receiving the image photoed with the television picture or the camera using this cellular phone in addition to voice and an alphabetic character in recent years. For example, a cellular phone is connected to a mobile computer, the image photoed with the camera is captured to a mobile computer, it transmits through a cellular phone, and the configuration which incorporates the image information which received with the cellular phone to a mobile computer, and is displayed on a liquid crystal screen is known at the time of reception.

[0004]

[Problem(s) to be Solved by the Invention] The configuration by the combination of the conventional cellular phone and a mobile computer has a problem in respect of weight and magnitude, in spite of forming the cellular phone into small lightweight since a mobile computer will be the need if it sees from the point which transmits and receives an image, and two equipments must be carried. Moreover, an image must be seen, having a mobile computer by the hand of another side, having a telephone single hand, in seeing an image to coincidence, telephoning, or placing on a knee top, a base, etc.

[0005] It aims at offering the small lightweight cell phone unit which can also see an image at the same time it telephones, while this invention solves these problems and has them single hand.

[0006]

[Means for Solving the Problem] The cell phone unit of this invention has the liquid crystal display section prepared in the side face of the body of a cellular phone, the arm prepared free [rotation] to the body of a cellular phone, and the reflecting mirror prepared at the tip of said arm, and has the configuration which looked at the image of said liquid crystal display section through said reflecting mirror. Telephoning to a partner by having a body of a cellular phone single hand by this configuration, and applying the receiver section of the body of a cellular phone to a lug, it is made to reflect with a reflecting mirror and a partner's face and expression which are projected on the liquid crystal display section can be seen before them.

[0007] Moreover, in the above-mentioned configuration, as for the cell phone unit of this invention, said arm has the elastic configuration in the longitudinal direction. The image copied by the reflecting mirror by this configuration can be laid in the location which suited self eyesight.

[0008] Moreover, as for said reflecting mirror, the cell phone unit of this invention has the configuration which can be rotated freely to the arm in the above-mentioned configuration. The include angle of the image copied by the reflecting mirror by this configuration can be adjusted free.

[0009] Moreover, the cell phone unit of this invention has the configuration whose reflecting mirror is a convex mirror in the above-mentioned configuration. The enlarged display of the image copied by the reflecting mirror by this configuration can be carried out.

[0010] Moreover, the body of a cellular phone with which the cell phone unit of this invention has the key stroke section, the 1st display, the transmission section, and the receiver section, The 2nd display formed in the side face of said body of a cellular phone, and the arm with which the end was supported to revolve by the tooth back of said body of a cellular phone free [rotation], It has the light reflex means formed in the other end of said arm, and when rotating said arm in the direction of an abbreviation right angle to the body of a cellular phone, said light reflex means has the configuration which stands face to face against said 2nd display. Before one, when an arm is rotated in the direction of an abbreviation right angle to the body of a cellular phone, it has a body of a cellular phone single hand and it hits against the receiver section by this configuration at a lug, the 2nd display can be seen.

[0011] Moreover, in the above-mentioned configuration, the cell phone unit of this invention has the configuration by which said light reflex means is arranged before it, when the receiver section is applied to a lug, where said arm is rotated in the direction of an abbreviation right angle to the body of a cellular phone. Telephoning to a partner by having a body of a cellular phone single hand, and applying the receiver section to a lug by this configuration, it is made to reflect with a light reflex means, and a partner's face and expression which are copied by the 2nd display can be seen before them.

[0012] Moreover, the cell phone unit of this invention has the configuration possessing the 1st reflecting mirror which reflects the image with which the 1st display projected the light reflex means, and the 2nd reflecting mirror made to reflect again the reflected light from said 1st reflecting mirror in the above-mentioned configuration. It can see before it, without reversing the image which the 2nd display projected by this configuration.

[0013]

[Embodiment of the Invention] The gestalt of operation of this invention is explained using a drawing below.

[0014] (Gestalt of operation) The whole cell phone unit configuration in the gestalt of the operation of this invention to drawing 1 is shown. In drawing 1, the body 10 of a cellular phone consists of the control unit 11 which consists of a key and a push button, the liquid crystal display section 12, the receiver section 13, the transmission section 14, and an antenna 15. The 2nd liquid crystal display section 16 is formed in the side face of the body 10 of a cellular phone. This 2nd liquid crystal display section 16 displays the image and data which are received using the communication facility of the body 10 of a cellular phone.

[0015] The projector arm 17 is attached in the rear face of the body 10 of a cellular phone free [rotation] to the body 10 of a cellular phone, and the reflecting mirror 18 is formed in the point. The projector arm 17 is elastic to the longitudinal direction, and can set die length as it freely.

[0016] When using it by the e-mail function for a cellular phone to await and to display alphabetic character mail on a condition, a talk state only with voice, and the liquid crystal display section, the projector arm 17 is folded into the rear face of the body 10 of a cellular phone as shown in drawing 2. The reflecting mirror 18 is contained and protected by the base of the body 10 of a cellular phone at this time. In this condition, it can be used completely like the usual cellular phone.

[0017] When performing reception of the time of carrying out television reception, the image data transmitted by the partner, or alphabetic data, the liquid crystal display section 16 of the side face of the body 10 of a cellular phone is made switch-on by switch actuation of a control unit 12. The image and alphabetic data which this received are displayed on the liquid crystal display section 16. When the voice relevant to image reception is also transmitted, the voice is received

in the receiver section 13, and voice ***** from the receiver section 13 can receive both an image and voice, looking at the image of the liquid crystal display section 16 of a side face.

[0018] On the other hand, in seeing an image, talking over the telephone by telephone, the projector arm 17 is caused in the condition which shows in drawing 1, and it adjusts the include angle of the reflecting mirror 18 at a tip. Before one, if the receiver section 13 of the body 10 of a cellular phone is brought to a lug and the transmission section 14 is brought near the opening in this condition, since a reflecting mirror 18 will come before it, the image reflected in the liquid crystal display section 16 is reflected with a reflecting mirror 18, and it can see.

[0019] In this case, since it becomes the image which right and left reversed as a reflecting mirror 18 is an one-sheet configuration, it is good to consider as a two-sheet configuration, as shown in drawing 3. In drawing 3, the case 25 which contained the reflecting mirrors 181 and 182 of two sheets is attached at the tip of the projector arm 17 free [rotation] centering on the revolving shaft 26. The 2nd branch 172 is contained and constituted in the 1st branch 171, and the projector arm 17 can adjust the die length by pulling out the 2nd branch 172 from the 1st branch 171.

[0020] Since the image from the liquid crystal display section 16 is reflected with the reflecting mirror 181 of the 1st sheet and it is made to carry out incidence to the reflecting mirror 182 of the 2nd sheet Since right-and-left reversal of the image which carried out right-and-left reversal with the reflecting mirror 181 is again carried out with a reflecting mirror 182, the image projected on a reflecting mirror 182 turns into an image which returned, and the image which the liquid crystal display section 16 projected can be seen, telephoning by seeing the image from a reflecting mirror 182. In addition, since an image is expanded by using a reflecting mirror 182 as a convex mirror, a big image can be seen.

[0021] Since the projector arm 17 is elastic in the die-length direction by pulling out the 2nd branch 172 from the inside of the 1st branch 171, it can adjust the far and near location of a reflecting mirror. Therefore, according to a user's eyesight, the location of a reflecting mirror can be adjusted freely. Moreover, a reflecting mirror 18 is in the condition which lengthened the projector arm 17, and can adjust the include angle which looks at an image by rotating a case 25 forward and backward centering on a revolving shaft 26.

[0022] Thus, voice message and image reception can be performed to coincidence only by having the body 10 of a cellular phone in one hand, and hitting against a lug by forming the projector arm 17 to the body 10 of a cellular phone, enabling free rotation, and forming a reflecting mirror 18 in the point. Therefore, image reception can also be carried out, with the small lightweight nature as a cellular phone maintained. Moreover, actuation also causes the projector arm 17 and is good at very easy actuation of only justifying a reflecting mirror 18.

[0023] In addition, in the gestalt of the above-mentioned operation, although the example in which the liquid crystal display section 16 was formed on the side face of the body 10 of a cellular phone was explained, you may form in parts other than a side face, for example, a rear face.

[0024]

[Effect of the Invention] The image transmitted while telephoning having a cell phone unit single hand can also be seen by observing with the reflecting mirror prepared at the tip of an arm in which the image copied by the liquid crystal display section by which this invention was prepared in the side face of the body of a cellular phone as explained above was prepared free [rotation] to the body of a cellular phone.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view showing the whole cell phone unit configuration by this invention

[Drawing 2] The side elevation at the time of arm receipt of the cell phone unit by this invention

[Drawing 3] the part explaining the configuration and actuation of the reflecting mirror section of a cell phone unit by this invention -- a cross-section top view

[Description of Notations]

10 Body of Cellular Phone

11 Control Unit

12 Liquid Crystal Display Section
13 Receiver Section
14 Transmission Section
15 Antenna
16 Liquid Crystal Display Section
17 Projector Arm
18,181,182 Reflecting mirror
25 Case
26 Revolving Shaft
171 172 Branch